## **Construction Contracts: Annual Update**

#### **Contract Award Amount to Engineer's Estimate**

WSDOT engineers prepare cost estimates for construction projects that the agency plans to advertise for competitive bidding. After bids are received, WSDOT then reviews each bid. WSDOT's goal is to have the lowest bid received on each project be no greater than the (original) engineer's estimate. WSDOT tracks project information and compares the engineer's estimate to the award amount as an indicator of the agency's estimating accuracy. When projects are completed, WSDOT compares the final cost of the project to the awarded amount and the engineer's estimate.

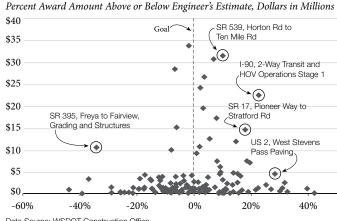
#### 138 Construction Contracts Awarded in FY 2007

WSDOT awarded 138 highway construction contracts between July 1, 2006 and June 30, 2007 (FY 2007). The 138 highway construction contracts awarded in FY 2007 represents a 16.9% increase from the number of contracts awarded (118 total) between July 1, 2005 and June 30, 2006 (FY 2006).

For every contract awarded, WSDOT tracks the difference between the contract award amounts and the engineer's (original) estimate. The total award amount of all contracts for FY 2007 totaled \$531,708,985, which was 1.2% above the total engineer's estimate of \$525,491,874. The awarded total represents a 47.1% increase from FY 2006 (total value: \$361, 514,031) in the value of contract awards.

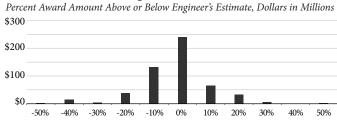
The scatter graph on the above right shows the award value for each contract and the total percent above or below the engineer's estimate. Sixty seven contracts (48.6%) were awarded below the engineer's estimate. The additional 71 construction contracts (51.4%) were awarded above the engineer's estimate. This is a slight improvement from FY 2006, when 45.8% of contracts

#### Individual Contracts: Award Amount to Engineer's **Estimate**



Data Source: WSDOT Construction Office

#### **Distribution of Contract Value Over/Under Award Amount to Engineer's Estimate**



Data Source: WSDOT Construction Office

(54 projects) were awarded below the engineer's estimate and the remaining 54.2% (64 contracts) were awarded above the engineer's estimate.

#### Highway Construction Contracts Awarded: Year-to Year Comparison<sup>1</sup>

|  | FY 2003       | FY 2004       | FY 2005       | FY 2006       | FY 2007       |
|--|---------------|---------------|---------------|---------------|---------------|
| Number of contracts awarded                                      | 176           | 129           | 141           | 118           | 138           |
| Total award amount for these contracts                           | \$314,534,831 | \$389,592,349 | \$500,099,488 | \$361,514,031 | \$531,708,985 |
| Total engineer's estimate for these contracts                    | \$355,420,644 | \$398,923,582 | \$511,364,300 | \$345,802,088 | \$525,491,874 |
| Average % total awards were above/below the total estimate value | -6.5%         | -1.4%         | 1.3%          | 1.9%          | 0.4%          |
| % Total award is above/below the engineer's estimate             | -11.5%        | -2.3%         | -2.2%         | 4.5%          | 1.2%          |
| Combined contract value awarded below the estimate               | 84.0%         | 53.3%         | 74.4%         | 30.5%         | 35.5%         |
| Number of contracts awarded below the estimate                   | 123           | 85            | 77            | 54            | 67            |
| % of contracts awarded below the estimate                        | 69.9%         | 65.9%         | 54.6%         | 45.8%         | 48.6%         |

Data Source: WSDOT Construction Office

Does not include the Tacoma Narrows Bridge, the Hood Canal Bridge, Design Build Contracts, or emergency contracts.

# **Construction Contracts: Annual Update**

#### **Contract Final Costs to Award Amount**

Selected contracts circled in the scatter graph on the previous page had a significantly higher cost over-run. These include:

# I-90, Two Way Transit and HOV Operations, Stage 1 (King County)

The contract award totaled \$22.5 million, 23% above the engineer's estimate as a result of significantly higher costs for night-time work that was not taken into consideration when compiling the estimate. Five bids were received.

#### SR 17, Pioneer Way to Stratford Road (Grant County)

The contract totaled \$14.6 million, 18% above the engineer's estimate. The increase was due to higher than expected material cost escalation and shortages for some materials. Four bids were received.

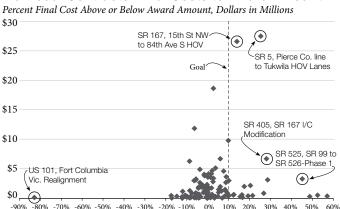
#### U.S. 2, West Stevens Pass Paving (King County)

The contract totaled \$4.5 million, 28% above the engineer's estimate. The overage was due to asphalt price escalation as well as the remote location of the project.

# **WSDOT** Estimates Revised to Reflect Current Costs

WSDOT monitors the current costs of construction materials for use in developing and updating project estimates. At the beginning of FY 2007, WSDOT updated engineer's estimates for all projects with estimates developed prior to January 2006. The estimates were updated using a new software application (*Bid Tabs Pro*) that allowed engineers access to more recent bid histories. Current costs for all projects were calculated and new inflation rates were applied. As a result, contracts awarded in FY 2007 were awarded at 1.2% above the engineer's estimate. By comparison, contract awards in FY 2006 were 4.5% above the engineer's estimates.

#### **Individual Contracts: Final Costs to Award Amount**



Data Source: WSDOT Construction Office

### Distribution of Contract Value Over/Under Final Cost to Award Amount



Data Source: WSDOT Construction Office

#### 119 Construction Contracts Completed

WSDOT completed 119 highway construction contracts in FY 2007, representing an 4.4% percent increase from the number of contracts completed in FY 2006 (114 contracts). For every completed contract, WSDOT tracks final construction costs compared to the original engineer's estimate and the award amount. WSDOT's goal is for the final construction costs to be less than 10% above the award amount.

#### Completed Contract: Final Costs to Award Amount<sup>1</sup>

|   | FY 2003       | FY 2004       | FY 2005       | FY 2006       | FY 2007       |
|---|---------------|---------------|---------------|---------------|---------------|
| Number of highway contracts completed               | 175           | 147           | 155           | 114           | 119           |
| Total final cost for highway contracts <sup>2</sup> | \$375,244,919 | \$294,482,387 | \$294,988,223 | \$225,445,739 | \$259,853,522 |
| Total award amount for highway contracts            | \$351,525,709 | \$274,495,656 | \$280,396,785 | \$201,782,248 | \$246,665,685 |
| Average % final costs exceeded award                | 3.8%          | 2.9%          | 3.9%          | 3.4%          | 2.2%          |
| % final cost exceeded award amount                  | 6.7%          | 7.3%          | 5.2%          | 11.7%         | 5.4%          |
| % of contract values less than 10% above award      | 65.3%         | 45.1%         | 76.3%         | 55.1%         | 68.7%         |
| Number of contracts less than 10% above award       | 137           | 115           | 121           | 92            | 98            |
| % of contracts less than 10% above the award        | 78.3%         | 78.2%         | 78.1%         | 80.7%         | 82.4%         |

Data Source: WSDOT Construction Office

<sup>1</sup>Does not include the Tacoma Narrows Bridge, the Hood Canal Bridge, Design Build Contracts, or emergency contracts.

Without Sales Tax

# **Construction Contracts: Annual Update**

#### **Contract Final Costs to Engineers Estimate**

Selected Contract circled in the scatter graph on the previous page exceeded the 10% threshold and include:

## SR 5, Pierce County Line to Tukwila HOV Lanes, Stage 3 (Pierce County)

\$5.5 million (25%) cost over-run occurred due to multiple delays caused by survey and plan errors.

#### SR 525, SR 99 to SR 526 - Phase 1 (Snohomish County)

\$1 million (43%) cost over-run occurred due to adding drainage to this project to coordinate work with a another phase of this project under construction nearby.

#### Final Costs to Award Amount Improve From FY 2006

The total final cost of contracts completed in FY 2007 was \$259,853,522. This exceeds the total award amount of \$246,665,685 by 5.4%. By comparison, contract final costs exceeded the awarded amount by 11.7% in FY 2006 (Final costs were \$225,455,739, total awards were \$201,782,248).

The scatter graph on the previous page shows the final cost of each contract and the percent above or below the award amount. The final cost for 98 contracts (82.4%) was less than 10% above the award. Twenty One completed contracts (17.6%) were 10% above the award amount. On average, the final contract costs were 2.2% above the original award amount.

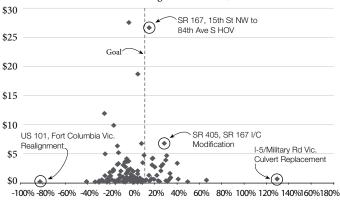
# Final Costs for FY 2007 are Below Engineer's Estimate

The final contract costs in FY 2007 totaled \$259,853,522. This was below the total engineer's estimate of \$261,545,513 by 0.6%. By comparison, in FY 2006, contract final costs exceeded the engineer's estimate by 0.8% (\$225,445,739 final, \$223,751,551 estimate).

The scatter graph on the above right shows the final cost of each contract and the percent it was above or below the engineer's estimate.

### Individual Contracts: Final Costs to Engineer's Estimate

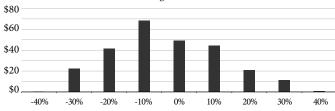
Percent Final Cost Above or Below Engineer's Estimate, Dollars in Millions



Data Source: WSDOT Construction Office

#### Distribution of Contract Value Over/Under Final Costs to Engineer's Estimate

Percent Final Cost Above or Below Engineer's Estimate, Dollars in Millions



Data Source: WSDOT Construction Office

Selected contracts circled in the scatter graph above had a significantly higher cost over-run. These include:

#### I-405, SR 167 Interchange Modification (King County)

The contract final cost of \$6.8 million was 29% above the engineer's estimate and over-ran the awarded amount by 28% due to an unexpected problem encountered while drilling shafts.

#### I-5, Military Road Vicinity Culvert Replacement (King County)

The contract final cost of \$660 thousand was 130% above the engineer's estimate and over-ran the awarded amount by 12% due to unexpected material encountered during excavation.

#### Completed Contracts: Final Cost to Engineer's Estimate<sup>1</sup>

|  | FY 2003       | FY 2004       | FY 2005       | FY 2006       | FY 2007       |
|--|---------------|---------------|---------------|---------------|---------------|
| Total number of completed construction contracts         | 175           | 147           | 155           | 114           | 119           |
| Total of construction contract estimates completed       | \$393,078,777 | \$277,017,902 | \$294,440,780 | \$223,751,551 | \$261,545,513 |
| Total final cost for construction contracts <sup>2</sup> | \$375,244,919 | \$294,482,387 | \$294,988,223 | \$225,445,739 | \$259,853,522 |
| % total contract values cost above/below estimate        | -5.6%         | -2.6%         | 0.7%          | 0.8%          | -0.6%         |
| % of contract value less than 10% above award            | 87.1%         | 42.8%         | 74.2%         | 64.9%         | 67.8%         |
| Number of contracts less than 10% above estimate         | 151           | 111           | 118           | 86            | 87            |
| % of contracts less than 10% above the estimate          | 86.3%         | 75.5%         | 76.1%         | 75.4%         | 73.1%         |

Data Source: WSDOT's Construction Office

<sup>2</sup>Without Sales Tax

Does not include the Tacoma Narrows Bridge, the Hood Canal Bridge, Design Build Contracts, or emergency contracts.